ATGGCTCTGGGGCCCAACTGTGGCATCCTACTGTTTCTGGCTGTTTCTGGGTGTGGC
CATCCCCAGGTTTCAAACTCGGGAAGTCGAATCGTGGGAGGGCATGCTGCCCCAGC
AGGCACATGGCCGTGGCAGGCTAGCCTCCGTCTGCACAAGGTGCACGTGTGTGGAG
GCTCCCTGCTCAGTCCAGAATGGGTGCTCACAGCAGCCCACTGCTTCTCTGGGTCTG
TGAACTCGTCTGATTATCAGGTGCACTTGGGAGAGCTTACGGTCACACTGTCTCCCC
ACTTCTCCACTGTAAAACGGATCATCATGTACACTGGCTCTCCAGGACCACCGGGGT
CCAGTGGGGACATTGCCCTGGTGCAGCTGTCCTCCCCGGTGGCCCTTTCCAGCCAG
GTCCAGCCTGTGTGCCTCCCAGAGGCCTCAGCTGACTTCTACCCTGGGATGCAGTGC
TGGGTGACTGGCTGGGGCTATACAGGGGAGGGAGAGCCTCTGAAGCCCCCATACAA
CCTTCAGGAGGCCAAAGTCTCTGTGGTGGATGTAAAGACCTGCAGCCAGGCTTACAA
TAGTCCCAATGGCAGCCTCATCCAGCCAGACATGCTATGCGCCCGGGGCCCTGGGG
ATGCCTGCCAGGATGACTCTGGAGGGCCACTAGTCTGCCAGGTGGCTGGAACCTGG
CAGCAGGCCGGCGTTGTCAGCTGGGGTGAGGGCTGTGGCCGCCCTGACCGCCCTG
GCGTCTATGCCCGGGTTACTGCCTATGTAAACTGGATCCACCACCACATCCCGGAAG
CAGGGGGCTCAGGAATGCAAGGGCTTCCCTGGGCTCCTCTCCTGGCTGCCCTCTTC
TGGCCAAGCCTCTTCCTGCTGCTGGTCTCTGGAGTCCTGATGGCCAAGTACTGGCTG
AGCTCTCCCTCCCACGCGGCCTCGGAACTCTGAATGAGGTGTAGCAACCAACCCAAG
TGTCTTTCTTAAATAAGTTAGTGTTTATTCAGTTTGCTTTGCCCCTCCCCTCCCCTTAG
CTTTGACTTAGGAAGCCAAAGTTTTCTGCATCAGATTATTGCAACATTTAACCTGAATT
TGTAGAACGGATGACATAAAGCAAATGGATGTCAAAAAAAAAAA (SEQ ID NO:1)

MALGPNCGILLFLAVSGCGHPQVSNSGSRIVGGHAAPAGTWPWQ

ASLRLHKVHVCGGSLLSPEWVLTAAHCFSGSVNSSDYQVHLGELTVTLSPHFSTVKRI

IMYTGSPGPPGSSGDIALVQLSSPVALSSQVQPVCLPEASADFYPGMQCWVTGWGYTG

EGEPLKPPYNLQEAKVSVVDVKTCSQAYNSPNGSLIQPDMLCARGPGDACQDDSGGPL

VCQVAGTWQQAGVVSWGEGCGRPDRPGVYARVTAYVNWIHHHIPEAGGSGMQGLPWAP

LLAALFWPSLFLLLVSGVLMAKYWLSSPSHAASEL (SEQ ID NO:2)

FIGURE 1

underlined = deleted in targeting construct

[ ] = sequence flanking Neo insert in targeting construct

ATGGCTCTGGGGCCCAACTGTGGCATCCTACTGTTTCTGGCTGTTTCTG[GGTGTGGCCA
TCCCCAGGTTTCAAACTCGGGAAGTCGAATCGTGGGAGGGCATGCTGCCCCAGCAGGCAC
ATGGCCGTGGCAGGCTAGCCTCCGTCTGCACAAGGTGCACGTGT]GTGGAGGCTCCCTGC
TCAGTCCAGAATGGGTGCTCACAGCAGCCCACTGCTTCTCTGGGTCTGTGAACTCGTCTG
ATTATCAGGTGCACTTGGGAGAGCTTACGGTCACACTGTCTCCCCACTT[CTCCACTGTA
AAACGGATCATCATGTACACTGGCTCTCCAGGACCACCGGGGTCCAGTGGGGACATTGCC
CTGGTGCAGCTGTCCTCCCCGGTGGCCCTTTCCAGCCAGGTCCAGCCTGTGTGCCTCCCA
GAGGCCTCAGCTGACTTCTACCCTGGGATGCAGTGCTGGGTGACTGGCTGGGGCTATACA
GGGGAGGGAG]AGCCTCTGAAGCCCCCATACAACCTTCAGGAGGCCAAAGTCTCTGTGGT
GGATGTAAAGACCTGCAGCCAGGCTTACAATAGTCCCAATGGCAGCCTCATCCAGCCAGA
CATGCTATGCGCCCGGGGCCCTGGGGATGCCTGCCAGGATGACTCTGGAGGGCCACTAGT
CTGCCAGGTGGCTGGAACCTGGCAGCAGGCCGGCGTTGTCAGCTGGGGTGAGGGCTGTGG
CCGCCCTGACCGCCCTGGCGTCTATGCCCGGGTTACTGCCTATGTAAACTGGATCCACCA
CCACATCCCGGAAGCAGGGGGCTCAGGAATGCAAGGGCTTCCCTGGGCTCCTCTCCTGGC
TGCCCTCTTCTGGCCAAGCCTCTTCCTGCTGCTGGTCTCTGGAGTCCTGATGGCCAAGTA
CTGGCTGAGCTCTCCCTCCCACGCGGCCTCGGAACTCTGAATGAGGTGTAGCAACCAACC
CAAGTGTCTTTCTTAAATAAGTTAGTGTTTATTCAGTTTGCTTTGCCCCTCCCCTCCCCT
TAGCTTTGACTTAGGAAGCCAAAGTTTTCTGCATCAGATTATTGCAACATTTAACCTGAA
TTTGTAGAACGGATGACATAAAGCAAATGGATGTCAAAAAAAAAAA (SEQ ID NO:1)

Gene Sequence Structure * 164 bp **Sequence Deleted** 287 bp

Size of full-length cDNA: 1122 bp

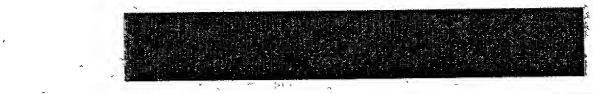
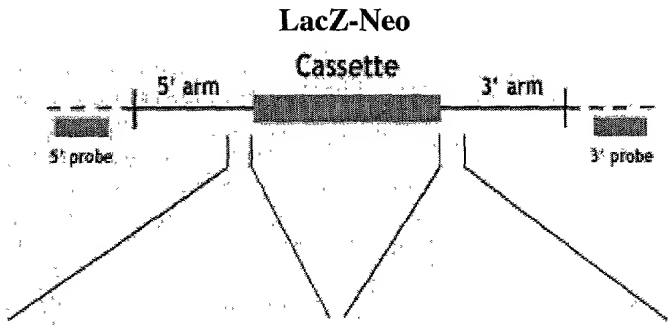


FIGURE 2A

Targeting Vector*
(genomic sequence)

Construct Number: 1607

Arm Length:
5': 6 kb
3': 0.7 kb



Targeting Vector
Endogenous Locus

*** Not drawn to scale**

5'>GGAGTCATGGAGGGCTCCCAG AGAAAGGGCATTGAGCAGAATGCC GGTCTCCAGATTCCCTCACCAACA GTGTCTCCTCTGGATCAGGGTGTG GCCATCCCCAGGTTTCAAACTCGG GAAGTCGAATCGTGGGAGGGCATG CTGCCCCAGCAGGCACATGGCCGT GGCAGGCTAGCCTCCGTCTGCACA AGGTGACGTGT**<3'** (SEQ ID NO:3)	**5'>**CTCCACTGTAAAACGGATCAT CATGTACACTGGCTCTCCAGGACC ACCGGGGTCCAGTGGGGACATTGC CCTGGTGCAGCTGTCCTCCCCGGT GGCCCTTTCCAGCCAGGTCCAGCC TGTGTGCCTCCCAGAGGCCTCAGC TGACTTCTACCCTGGGATGCAGTG CTGGGTGACTGGCTGGGGCTATAC AGGGGAGGGAG**<3'** (SEQ ID NO:4)

FIGURE 2B

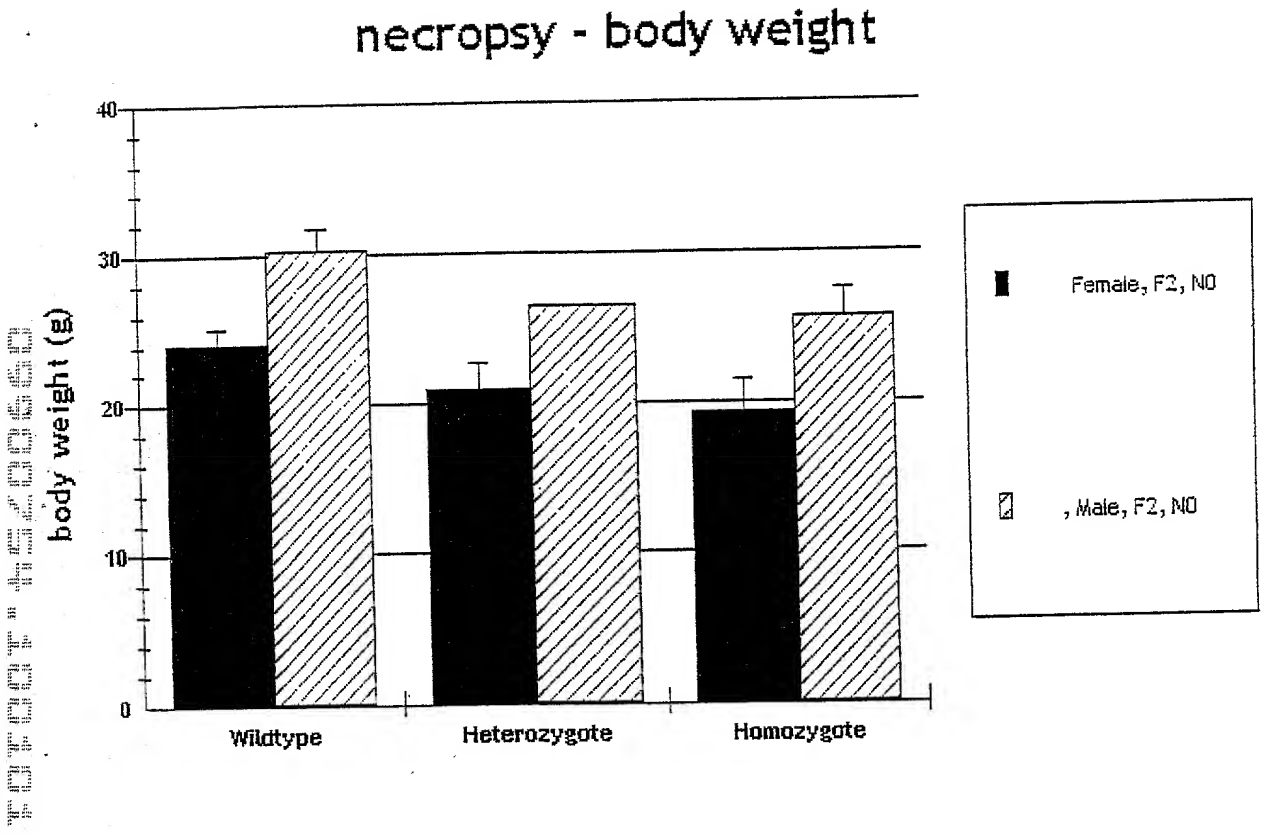

necropsy - body weight
body weight (g)
40
30
20
10
0
Wildtype
Heterozygote
Homozygote
Female, F2, N0
, Male, F2, N0

FIGURE 3

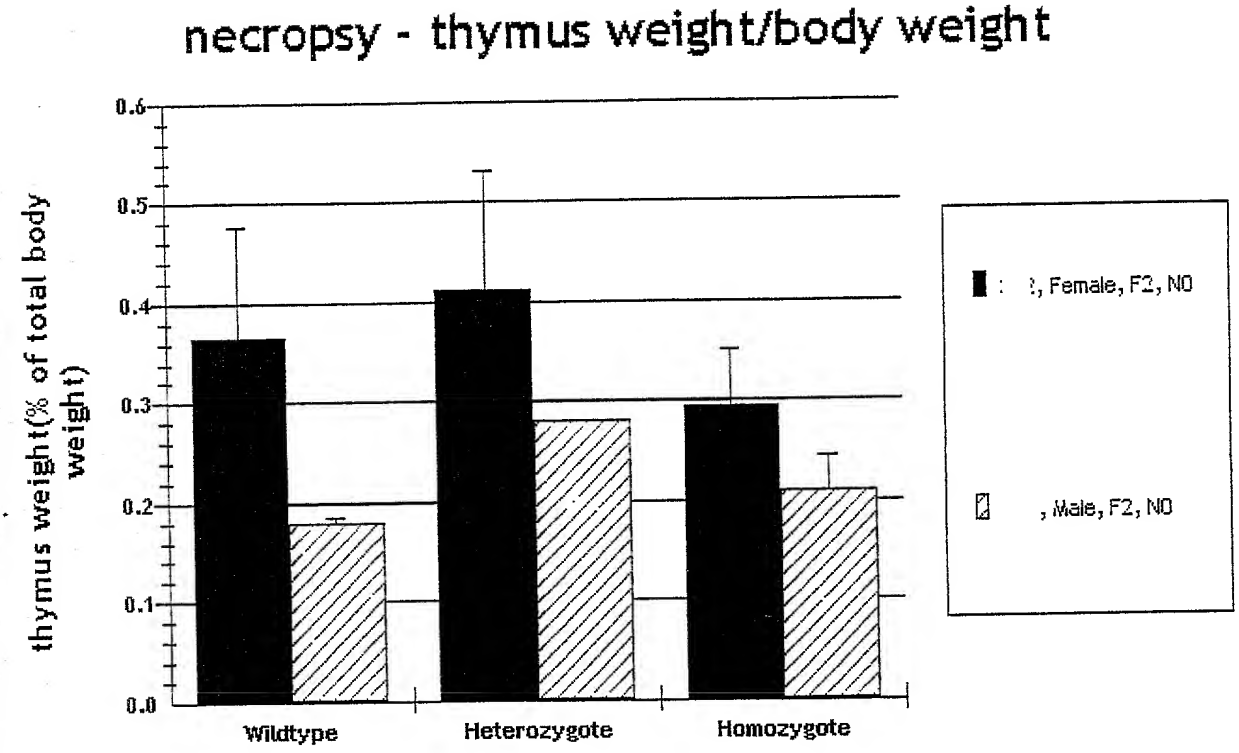

necropsy - thymus weight/body weight
thymus weight(% of total body weight)
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Wildtype
Heterozygote
Homozygote
, Female, F2, N0
, Male, F2, N0

FIGURE 4

PCT/US07/62062

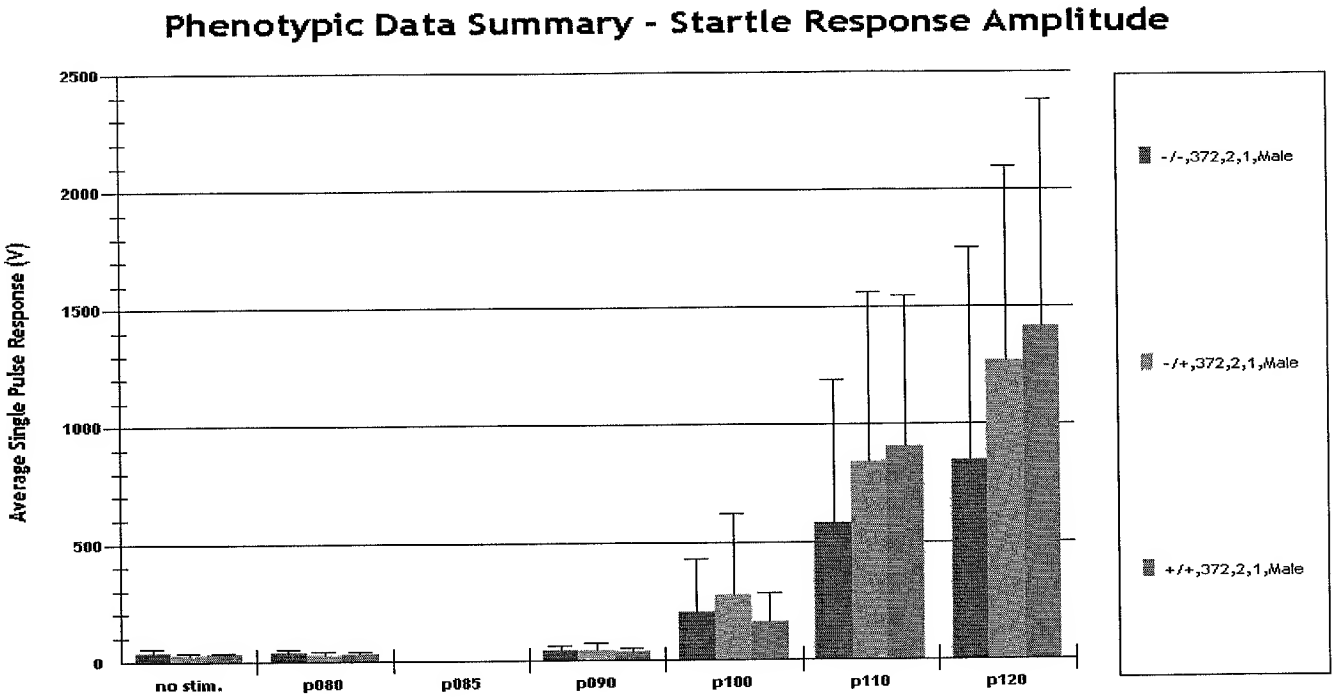


FIGURE 5